

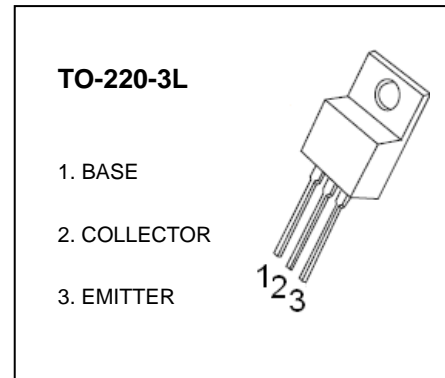


TO-220-3L Plastic-Encapsulate Transistors

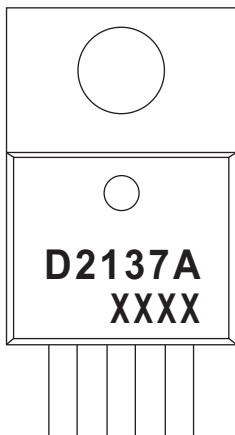
2SD2137A TRANSISTOR (NPN)

FEATURES

- High DC Current Gain
- Low Collector to Emitter Saturation Voltage $V_{CE(sat)}$
- Allowing Automatic Insertion with Radial Taping

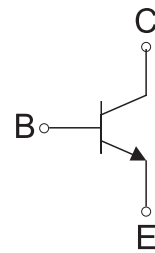


MARKING



D2137A=Device code
XXXX=Code

Equivalent Circuit



MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	3	A
P_C	Collector Power Dissipation	2	W
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	63	$^\circ\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^\circ\text{C}$

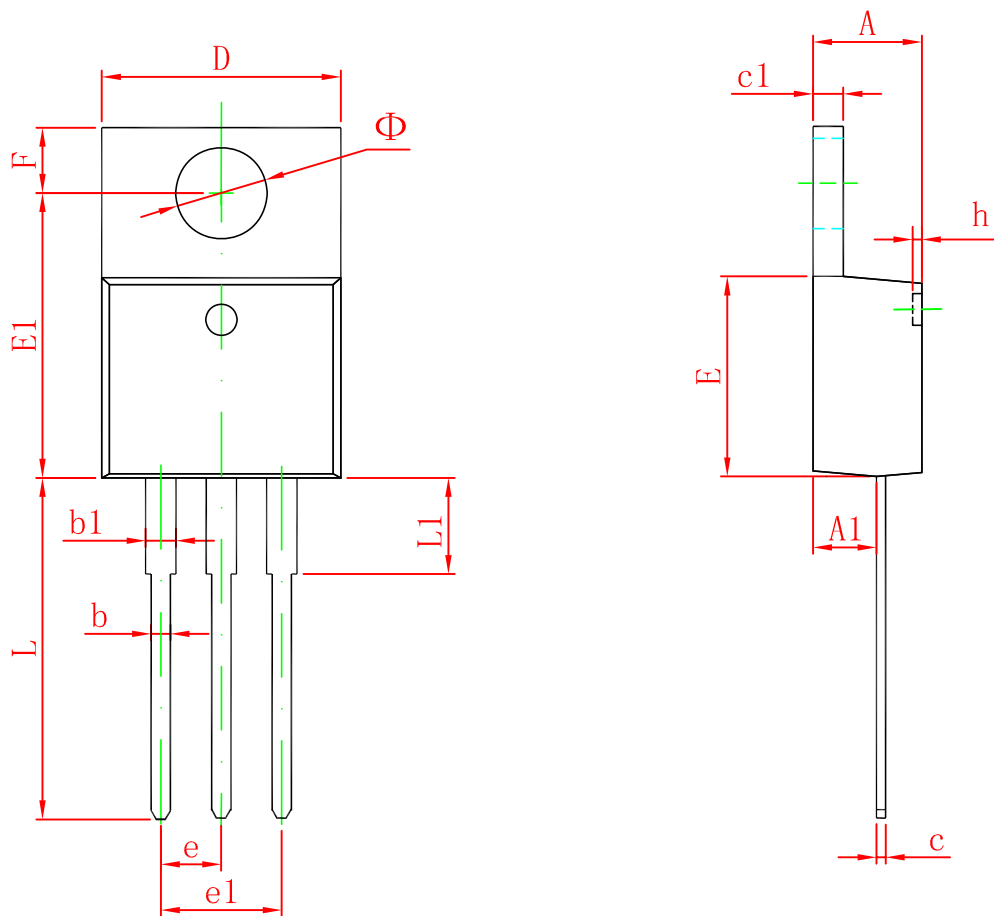
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	80			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =30mA, I _B =0	80			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	6			V
Collector cut-off current	I _{CBO}	V _{CB} =80V, I _E =0			100	μA
Collector cut-off current	I _{CEO}	V _{CE} =60V, I _B =0			100	μA
Emitter cut-off current	I _{EBO}	V _{EB} =6V, I _C =0			100	μA
DC current gain	h _{FE(1)}	V _{CE} =4V, I _C =1A	70		320	
	h _{FE(2)}	V _{CE} =4V, I _C =3A	10			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =3A, I _B =0.375A			1.2	V
Base-emitter voltage	V _{BE}	V _{CE} =4V, I _C =3A			1.8	V
Transition frequency	f _T	V _{CE} =5V, I _C =0.2A, f=10MHz		30		MHz

CLASSIFICATION OF h_{FE(1)}

RANK	Q	P	O
RANGE	70-150	120-250	160-320

TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155